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Ajay Kumar

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AUSTIN, TX 78767

EXAMINER

WON, MICHAEL YOUNG

ART UNIT

PAPER NUMBER

2155

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/824,099 | Applicant(s) KUMAR, AJAY | |
| | Examiner MICHAEL Y. WON | Art Unit 2155 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 18 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 24-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 and 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed February 18, 2008.
2. Claims 1, 2, 9, 10, 14, 15, and 24-29 have been amended.
3. Claims 1-19 and 24-29 have been examined and are pending with this action.
4. The rejection of claims in the previous office action, rejected under 35 USC 101 and 35 USC 112, 2nd, has been withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-19 and 24-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claims recite a "persistence manager configured to detect changes to application state data within the server container". The specification does not explicitly recite this functionality.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-6, 9-19 and 24-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Mullins (US 7,103,600).

INDEPENDENT:

As per **claim 1**, Mullins teaches a system, comprising:

a server cluster, comprising:

a plurality of server nodes (see col.1, line 67-col.2, line 3: “distributed over multiple physical computer machine locations... that may be independent of the data stores”), wherein each server node comprises:

a server container (see col.16, lines 53: “EJB container”);

one or more applications configured to execute within the server container (see col.16, lines 49-53: “associated computer program module, can be configured to operate as a tool to create, access, support and correctly manage”); and

a Java Data Object (JDO) persistence manager configured to detect changes to application state data within the server container and to persist the application state data (see col.8, lines 8-12: “persistence manager API or persistence library to persist the object, its data and/or links to other objects in an object model”); and

a persistent data store coupled to the cluster, configured to store application state data of the one or more applications of each respective server container, and configured to make application state data accessible to each of the plurality of server nodes (see col.4, lines 8-18: “persistent data source”);

wherein in response to detecting a change in application state data within the server container, the JDO persistence manager is configured to persist only changed application state data to the persistent data store (see col.7, lines 24-34: “persist all or portion”; “transparently persisting all or a portion of”; “persisting any changes to an instance... or any changes to the repository definition”; and col.35, lines 33-35: “which only persist those attributes that have changed”).

As per **claim 9**, Mullins teaches a system comprising:

an application server (see col.7, lines 11: “EJB server”), comprising:

an application server container (see col.16, lines 53: “EJB container”);

one or more applications configured to execute within the application server container (see col.16, lines 49-53: “associated computer program module,

can be configured to operate as a tool to create, access, support and correctly manage”); and

a Java Data Object (JDO) persistence manager configured to detect changes to application state data within the application server container and to persist the application state data (see col.8, lines 8-12: “persistence manager API or persistence library to persist the object, its data and/or links to other objects in an object model”); and

a persistent data store coupled to the application server, configured to store application state data of the one or more applications, and configured to make the application state data accessible to the application server and one or more other application servers (see col.4, lines 8-18: “persistent data source”);

wherein in response to detecting a change in application state data within the application server container , the JDO persistence manager is configured to persist only a changed portion of the application state data within the application server container to the persistent data store (see col.7, lines 24-34: “persist all or portion”; “transparently persisting all or a portion of”; “persisting any changes to an instance... or any changes to the repository definition”; and col.35, lines 33-35: “which only persist those attributes that have changed”).

As per **claim 14**, Mullins teaches a method, comprising:

a Java Data Object (JDO) persistence manager detecting an access to application state data within a server (see col.7, lines 14-23: “persist at least one action

selected from the group consisting of creating, maintaining, accessing...”; and col.8, lines 8-12: “persistence manager API or persistence library to persist the object, its data and/or links to other objects in an object model”);

the JDO persistence manager determining whether the access alters the application state, in response to said detecting (see col.10, lines 5-7: “detecting changes to object data and/or changes to the object graph/model that includes the particular object or is associated with it”); and.

in response to determining that the access alters the application state within the server, the JDO persistence manager persisting only the elements of the application state that are changed by the access to a persistent store that makes the application state accessible to the server and to one or more other servers (see col.7, lines 24-34: “persist all or portion”; “transparently persisting all or a portion of”; “persisting any changes to an instance... or any changes to the repository definition”; and col.35, lines 33-35: “which only persist those attributes that have changed”).

As per **claim 24**, Mullins teaches a computer-accessible storage medium storing program instructions, wherein the program instructions are computer-executable to implement a Java Data Object (JDO) persistence manager configured to:

detect an access to application state data within a server (see col.7, lines 14-23: “persist at least one action selected from the group consisting of creating, maintaining, accessing... ”; and col.8, lines 8-12: “persistence manager API or persistence library to persist the object, its data and/or links to other objects in an object model”);

in response to said detecting, determine whether the access alters the application state (see col.10, lines 5-7: “detecting changes to object data and/or changes to the object graph/model that includes the particular object or is associated with it”); and

in response to determining that the access alters the application state within the server, persist only the elements of the application state that are changed by the access to a persistent store that makes the application state accessible to the server and to one or more other servers (see col.7, lines 24-34: “persist all or portion”; “transparently persisting all or a portion of”; “persisting any changes to an instance... or any changes to the repository definition”; and col.35, lines 33-35: “which only persist those attributes that have changed”).

DEPENDENT:

As per **claims 2, 10, 15 and 25**, which respectively depends on claims 1, 9, 14 and 24, Mullins further teaches wherein the JDO persistence manager is configured to persist only mutated application state data to the data store, only in response to mutation of the application state data (see col.7, lines 24-34 and col.35, lines 33-35).

As per **claims 3, 11, 16 and 26**, which respectively depends on claims 1, 9, 14 and 24, Mullins further teaches wherein the application state data comprises hypertext transfer protocol (http) session data (see col.2, lines 1-3 and col.7, lines 55-60).

As per **claims 4, 12, 17 and 27**, which respectively depends on claims 1, 9, 14 and 24, Mullins further teaches wherein the application state data comprises a session bean (see col.7, lines 55-60).

As per **claims 5, 13, 18 and 28**, which respectively depends on claims 1, 9, 14 and 24, Mullins teaches further comprising a JDO-style write barrier configured to detect mutation of the application state data (see col.7, lines 24-34; col.10, lines 5-7; and col.35, lines 33-35).

As per **claims 6, 19 and 29**, which respectively depends on claims 1, 14 and 24, Mullins further teaches wherein one or more of the applications is configured to function as a distributed application across two or more of the server nodes (see col.7, lines 3-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mullins (US 7,103,600) in view of Jacobs et al. (US 6,385,643).

As per **claim 7**, which respectively depends on claim 1, Mullins does not explicitly teach wherein the plurality of server nodes is configured to detect the failure of

a cluster node and recover sessions from a failed node by accessing session state data from the persistent data store.

Jacobs teaches wherein a plurality of server nodes is configured to detect the failure of a cluster node (see col.9, lines 49-62) and recover sessions from a failed node by accessing session state data from the persistent data store (see col.15, lines 53-56).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Mullins in view of Jacobs so that the plurality of server nodes is configured to detect the failure of a cluster node and recover sessions from a failed node by accessing session state data from the persistent data store. One would be motivated to do so because Mullins teaches that objects have relationships that can be one to one, one to many, or many to many (see col.2, lines 15-21) and data persistence allows for consistent mapping among these objects.

As per **claim 8**, which respectively depends on claim 1, Mullins does not explicitly teach further comprising a non-sticky load balancer configured to distribute session requests to server nodes based on server workload, wherein the persistence mechanism is configured to synchronize session data to the persistent store.

Jacobs teaches a non-sticky load balancer configured to distribute session requests to server nodes based on server workload (see col.11, lines 17-28), wherein the persistence mechanism is configured to synchronize session data to the persistent store (see col.2, lines 49-51 and col.15, lines 53-56).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the system of Mullins in view of Jacobs by implementing

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a non-sticky load balancer configured to distribute session requests to server nodes based on server workload, wherein the persistence mechanism is configured to synchronize session data to the persistent store. One would be motivated to do so because load balancing is one of plural environments to employ Mullins teachings and because Mullins teaches that objects have relationships that can be one to one, one to many, or many to many (see col.2, lines 15-21) and data persistence allows for consistent mapping among these objects.

Response to Arguments

8. Applicant's arguments with respect to claims 1-19 and 24-29 have been considered but are moot in view of the new ground(s) of rejection.

Based on the amended claim language and after further searching, Mullins (US 7,103,600) has been cited to better teach the limitations of the pending claims. The limitations of claims 7 and 8 are taught by Mullins and Jacobs et al. (US 6,385,643.

Conclusion

9. For the reasons above claims 1-19 and 24-29 have been rejected and remain pending.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL Y. WON whose telephone number is (571)272-3993. The examiner can normally be reached on M-Th: 10AM-8PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on 571-272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Won/

Primary Examiner

May 5, 2008